



## Onchocerciasis/River Blindness (On-kough-sir-KY-A-sis)

### What is onchocerciasis?

Onchocerciasis is an infection caused by the parasite *Onchocerca volvulus* (worm), spread by the bite of an infected blackfly. Also called River Blindness because the transmission is most intense in remote African rural agricultural villages, located near rapidly flowing streams. Persons with heavy infections will usually have one or more of the three conditions; dermatitis, eye lesions, and/or subcutaneous nodules. Superficial skin biopsies will identify the parasite microscopically. The World Health Organization's (WHO) expert committee on onchocerciasis estimates the global prevalence is 17.7 million, of whom about 270,000 are blind and another 500,000 have visual impairment. About 99% of infected persons are in Africa; the remainder is in Yemen and six countries in the Americas. Onchocerciasis is commonly treated with an oral medicine called Ivermectin.

### In what parts of the world am I more likely to get onchocerciasis?

Onchocerciasis is locally transmitted in Mexico, Guatemala, Ecuador, Colombia, Venezuela, Brazil, Yemen and thirty countries of Africa. Onchocerciasis in casual travelers is rare; the infection is transmitted in rural areas, and, unlike malaria, contracting onchocerciasis requires more than one infectious bite. Thus, risk of infection is greater in adventure travelers, missionaries, and Peace Corps volunteers who are likely to have intense and prolonged exposure to black fly bites. Given the low rate of transmission in the Americas, the likelihood is very low that any travelers in this region (even missionaries and Peace Corps volunteers) would ever get infected.

### How is onchocerciasis spread?

The disease spreads from person to person by the bite of a blackfly. When a blackfly bites a person who has onchocerciasis, microscopic worms (called microfilariae) in the infected person's skin enter and infect the blackfly. The microfilariae develop over 2 weeks to a stage where they are infectious to humans. An infectious blackfly will typically inject one or two larvae to transmit the disease to another person. Since the worms can only increase their numbers in the human by first mating and then cycling their microfilariae through the black fly, the intensity of human infection (number of worms in an individual) is related to the number of infectious bites sustained by an individual. Blindness is almost always in persons with intense infection.

### Who is most at risk for onchocerciasis?

Those most at risk are adventure travelers, missionaries, and Peace Corps volunteers who are exposed to black fly bites in endemic areas. The disease is most intensely transmitted in remote African rural agricultural villages, located near rapidly flowing streams.

**What is the impact of onchocerciasis?**

Onchocerciasis was a leading cause of preventable blindness and skin disease. However, the global disease burden of this disease has been considerably reduced as the result of very successful disease control programs led by the World Health Organization (WHO). These programs are based on vector control and/or mass administration of an oral drug called ivermectin (Mectizan<sup>®</sup>), being donated by Merck. As a result of these programs, millions no longer suffer pain, disfigurement, and blindness.

**What are the symptoms of onchocerciasis?**

Infected persons may be without symptoms. Those with symptoms will usually have one or more of the three manifestations; skin rash, eye lesions, and / or subcutaneous bumps under the skin. The most serious manifestation consists of lesions in the eye that can progress to blindness.

**How soon after infection will I have symptoms of onchocerciasis?**

The normal incubation period of onchocerciasis ranges from nine to 24 months after the bite of an infected blackfly. Each female worm can reproduce millions of microfilariae during her lifetime. Worms can live for 10-15 years.

**What should I do if I think I may have onchocerciasis?**

If you think you might have onchocerciasis, see your health care provider who may order skin biopsies ('snips'). However, examination of skin snips does not always show the parasites. Serologic testing for antibodies is available, but a positive result does not necessarily indicate an active case of onchocerciasis.

**What is the treatment for onchocerciasis?**

Ivermectin is administered as an oral dose of 150 micrograms per kilogram (maximum 12 mg) every 6-12 months. The drug should probably not be given to pregnant women or children under 5 years. Ivermectin does not kill the adult parasites, but reduce the numbers of microfilariae in skin so the disease does not progress.

**How can I prevent onchocerciasis?**

Blackflies bite during the day. The best prevention is to avoid infective bites of the blackfly by

- Using insecticides such as DEET, and
- Wearing long sleeve shirts and pants.

**Can I take medication to prevent onchocerciasis?**

No, there is neither a vaccine nor recommended drug available to prevent onchocerciasis.

*This fact sheet is for information only and is not meant to be used for self-diagnosis or as a substitute for consultation with a health care provider. If you have any questions about the name of disease described above or think that you may have a parasitic infection, consult a health care provider.*

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